

Central Region Working Group

K. Yokoya

2015-1210 ADI meeting

2015-1211 ILC-CLIC Positron

Charge (1)

- To develop a conceptual design for the central region of the ILC
 - at a level of detail consistent with a change request and
 - sufficient to define the CFS features of this area of the machine.
- The central region = downstream of the two main linacs:
 - e- source,
 - Undulator driven e+ source,
 - DR transfer lines (but not DR),
 - RTML,
 - BDS including associated hardware (dumps, collimators, spoilers etc..)
 - IR

Charge (2)

- Should assume
 - Detector Hall layout as specified in CR-003.
 - Tunnel geometry as specified in CR-004 (2x1.5km extension) and lattice ILC2015b.
 - ML tunnel cross-section as outlined for a 1.5 m central shielding wall (CR13).
- **Positron source**
 - Should be **based on the undulator driven**, positron source as modified by CR-011.
 - **Should not incorporate any active features of a conventional positron source** (e.g. klystron galleries, additional shielding, etc..) at this time.
 - Should however satisfy yourselves that the CFS layout you propose is consistent with the possibility of the subsequent adoption of such a source
 - should that prove advantageous at some point in the future.

Charge (3)

- Some of the information you will likely need is not completely specified at this time. Hopefully it will be available soon.
- The Working Group will thus need to exercise a degree of judgment in how it approaches this task.
- Avoid the temptation of trying to produce an engineering level of detail.
 - We are not scoped for such a task at this time
 - It is important to develop the central region concept in a timely way since changes have been made since the TDR and we need to progress towards a Kitakami site specific CFS footprint.
- The Working Group should attempt to derive a cost-neutral (or cost reducing) approach
 - though I appreciate that the TDR baseline was estimated in a somewhat generic fashion for this part of the machine thus cost comparisons might prove difficult.

Charge (4)

- You should plan towards **having a working concept for the ECFA workshop in Santander, in June 2016.**

- Members

- General Benno List, Ewan Paterson, Kaoru Yokoya
- BDS Toshiyuki Okugi, Glen White
- Sources Masao Kuriki
- CFS Masanobu Miyahara, Tomoyuki Sanuki

- Meetings

- Normally Tuesday, standard time (6pm California, 3pm EU, 11pm Japan)
 - Right after CFS (1hr earlier) what to do in DST?
 - Same time as TB
 - First meeting on Dec.15
- Every other week

What must be considered?

- Positron line
 - Global timing chicane (where?)
 - Positron spin rotator
 - Auxiliary positron source
- BDS line
 - Muon wall
 - Collimator area (shielding)
 - Beam dump (tune-up dumps, main dumps)
 - Dump hall design? Who? By when?
- Tunnel shape/size
 - Shielding wall
 - Local shielding in e+ target region, collimator region
 - Laser hut
 - But don't go into detail of CFS
- Must take into account
 - Installation path
 - Commissioning scenario
 - Possible accidents
- Must work with close link to CFS, BDS, positron

Central Region Redundancy

From Ewan's slides at LCWS

- Electron source
 - 2 guns, 2 lasers
 - Buncher: spare klystron
 - 5GeV booster : 21 cryomodules + 3 spare, spare klystron
- Positron
 - Spare undulator?
 - No spare target, flux concentrator, capture section
 - Warm RF, booster linac, ECS ?